REMARKS

Claims 1-3, 5-10, 12-14, and 16-21 are pending. The claims have not been amended by this paper and therefore no listing of claims is provided. The applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

The Supplemental Amendment of 26 March 2003

On 26 March 2003, a Supplemental Amendment was filed. Subsequently, on 31 March 2003, the outstanding office action, which was made final, was mailed. However, the Supplemental Amendment was not taken into account by the March 31 office action. In a telephone conversation between the undersigned and Examiner Souw on 21 May 2003, Examiner Souw agreed to issue another office action taking the Supplemental Amendment into account. The applicants respectfully request notice that the Supplemental Amendment was entered.

The Finality of the March 31 Office Action

In an earlier telephone conversation with Examiner Souw, for which no interview summary form was received by the applicants, the undersigned requested that the finality of the outstanding office action be withdrawn. The examiner agreed to this request. However, in the subsequent interview of 21 May 2003, the examiner stated that he did not recall the earlier discussion regarding finality. Therefore, the applicants filed a Request for Withdrawal of Finality of Rejection on 21 May 2003.

The applicants believe that the present amendment should be entered and that the rules for entering amendments after a final rejection should not apply to this amendment. That is, the finality of the March 31 office action is improper, for the reasons given in the Request for Withdrawal of Finality of Rejection of 21 May 2003, and this amendment should not be treated as an amendment after a final rejection.

There is a mistake in the wording of the Request for Withdrawal of Finality of Rejection as follows. The request states that section 101 was not mentioned in the previous office action. However, section 101 was mentioned in the previous office action. The first office action did not mention an error or section 101 with regard to formula (2). Neither the formula nor the part of the specification that the examiner found objectionable was amended in the first response. Therefore, the new ground of rejection was not necessitated by the response and the finality of the rejection is improper. The examiner was aware that this was a new ground of rejection because the heading "New Rejections §101" appeared over the rejection at issue. See page 6 of the March 31 office action. The applicants respectfully request that the finality of the March 31 rejection be withdrawn for these reasons.

The Information Disclosure Statement

The March 31 office action states that the IDS filed on 13 July 2001 was not considered because translations were not provided for the non-English references. However, 37 CFR 1.98 does not require a translation of non-English references. The rule requires only a concise statement of the relevance of each reference. The applicants provided a concise statement of the relevance of these references in the background section of the application. See page 1. Therefore, the original IDS should have been considered, and an initialed copy of the PTO form

1449 should have been returned. The applicants respectfully request that the references be considered and that an initialed copy of the form PTO 1449 be returned.

The Drawings

The drawings have been amended to correct the problem noted in numbered paragraph 2 of the March 31 office action. That is, the words "left period" have been changed to "elapsed time." This change is consistent with changes made to the specification and involves no new matter.

The Objections to the Specification

The specification has been amended to overcome the objection of the final paragraph of page 3 of the March 31 office action. The wording "The variation S is calculated at 3σ," which the examiner found objectionable, has been changed to "The acceptable variation is 3σ." This corrects an error made in the previous amendment and is a minor change to overcome the examiner's criticism of the language. No new matter has been added, since the statement that appeared in the original specification would be understood by one of ordinary skill in the art to mean that pieces are not accepted when measurements are outside the range of 3σ.

Incidentally, this section of the office action was given a heading that says "Reinstatement of Previous Objections." Since the objections were never withdrawn, there is no reason to reinstate them. The applicants interpret "reinstate" to mean "restate" in this heading.

The specification has been amended to overcome the objection of the first paragraph of page 4 of the March 31 office action. The wording "The graph of Fig. 3 varies with every film, and the thickness variation T indicates the variation in thickness that occurs," which the examiner found objectionable, has been removed.

As for the paragraph that begins on page 5, line 6, of the March 31 office action, the objectionable wording with respect to equation (2) has been corrected by the changes to the paragraph that begins on page 10, line 5, of the specification. That is, the specification no longer states that, with formula (2), the thickness is zero when t is zero. This is an obvious error and its correction involves no new matter. The wording added to correct this error is simply a statement of the natural mathematical results of applying formula (2) and thus involves no new matter.

As for the final paragraph of page 5 of the March 31 office action, the sentence "The thinner the oxide film is, the more the rate of variation in change of the thickness is prominent" has been changed to "The thinner the oxide film is, the more prominent the variation in the thickness is" in response to the examiner's comments.

The 35 USC 101 Rejections

Claims 3, 10, 14 and 21 were rejected under 35 USC 101 as relating to inoperable subject matter. The wording of the specification (page 10, lines 5-8) that the examiner found to be erroneous has been corrected, as mentioned above. Therefore, the applicants respectfully request that the section 101 rejection of claims 3, 10, 14 and 21 be withdrawn.

The rejection under section 101 of the first office action was repeated on page 10 of the March 31 office action. Again, the word "reinstate" was used in the heading when the word "restate" was apparently intended. It is asserted in numbered paragraph 10 that claims 3, 10, 14, and 21 do not recite any method that can be claimed. The claims at issue recite steps for measuring the thickness of an oxide film, and the formula is merely related to one of the steps.

This is a common way of writing claims, and countless issued patents are written this way. The examiner's position is not supported by current practice.

Furthermore, the examiner has mixed assertions of lack of novelty into the reasons for section 101 rejection. For example, the examiner states the following on page 7 of the March 31 office action:

> ". . .claims 3, 10, 14, and 21 do not recite any method that can be claimed, but just an equation of formula . . . which is not invented by Applicant but is widely known in the art in various forms of empirical formulas, as admitted by Applicant himself . . and as evidenced by Huang. . .
>
> "Given a behavior shown in Huang's Fig. 2, it would have been obvious to one of ordinary skill in the art at the time the invention was made to derive an empirical formula such as Applicant's."

These assertions belong in a non-novelty rejection, but section 101 is not applicable. The examiner has evidently confused the issue of statutory invention under section 101 with that of novelty.

Finally, the claims rejected in paragraph 10 are dependent claims. It is not logical that a claim that is statutory is rendered non-statutory when additional material is added by way of a dependent claim. That is, the position of the examiner is that the independent claims are statutory, but the dependent claims are non-statutory. The applicants do not understand how adding material to a statutory claim can render it non-statutory. For the reasons stated, the applicants respectfully request that the section 101 rejection of claims be withdrawn as being an improper application of section 101.

The Rejections Under 35 USC 112, First Paragraph

In numbered paragraph 12, claims 3, 10, 14 and 21 were rejected under section 112, first paragraph, for a non-enabling description. The examiner states that the failure to describe details regarding the constant a renders the specification non-enabling. However, one of ordinary skill in the art, with reasonable experimentation, can determine the constant a. As stated in the specification, a is a constant determined based on the atmosphere around the oxide film. There is enough information in the specification for one of ordinary skill in the art to experimentally determine the constant a. In the formula $y = a \ln(t) + b$, the variables t, and b can be measured, and y is an apparent value, which read when measuring the film thickness, as explained in the specification. Thus, determining a for a given atmosphere is a simple one-variable math problem. Therefore, the applicants respectfully request withdrawal of the rejection of claims 3, 10, 14 and 21 under section 112, first paragraph.

In numbered paragraph 9, claims 4, 11, 15 and 22 have been rejected under 35 USC 112, first paragraph. These claims have been canceled, and the rejection will thus not be discussed.

The Rejections Under 35 USC 112, Second Paragraph

In numbered paragraph 13, claims 3, 10, 14 and 21 were rejected under section 112, second paragraph as being indefinite. The grounds for this rejection are difficult to understand. Apparently, the grounds for this rejection are in the question posed by the examiner in the first paragraph of page 10 of the office action. The examiner asks the following paraphrased question: Since, in the formula $y = a \ln(t) + b$, the constant b is a thickness of the oxide film measured immediately after the gate oxide film 8 is formed, why would anyone spend more time

and energy for measuring the parameter once again, using Applicant's suggested method and/or formula? This question has nothing to do with section 112. Section 112 does not require that applicants have a reason for the steps recited in a claim. Section 112 requires that the claims be definite, and the examiner has failed to state any reason why claims 3, 10, 14 and 21 are not definite. The examiner seems to be saying that the invention is not useful. Usefulness is an issue under section 101, not section 112. The invention is useful as explained in the specification.

In numbered paragraph 14, claims 4, 11, 15, and 22 are rejected under section 112, second paragraph. These claims have been canceled, and the rejection will thus not be discussed.

The Rejection Under 35 USC 102

All prior art rejections of numbered paragraphs 15, 16, 17, 18, and 19 rely on the patent to Huang. As stated in the Supplemental Amendment filed on 26 March 2003, the patent to Huang was filed in the US after the applicants prepared a written disclosure of the main elements of the present invention in preparation for the filing of the priority application in Japan. Therefore, the patent to Huang is not prior art, and the rejections that rely on Huang should be withdrawn.

Claims 1, 5, 12, and 16 were rejected under 102(a) and 102(e) as being anticipated by the patent to Huang. As stated previously, the patent to Huang cannot be used as prior art in a §102(a) rejection because the publication date of the Huang patent is April 24, 2001, which is after the filing date (July 13, 2000) of the present application. Therefore, the rejection under section 102(a) should be withdrawn.

Claims 1, 5, 12 and 16 recite that an exposure period is measured and the thickness of the oxide film is measured by irradiating the oxide film with light, in accordance with the exposure period. The exposure period is defined from a time at which the oxide film is formed to a time at which a thickness of the oxide film is measured. Therefore, the thickness can be measured accurately because the measured thickness may be corrected in accordance with the exposure period (page 2, lines 16-21).

The patent to Huang, however, fails to disclose the use of a relationship between an exposure period and thickness of an oxide film to determine real thickness. The Huang patent discloses a phenomenon that the thickness of the oxide film appears to increase when the oxide film is exposed to the atmosphere. However, the Huang patent fails to disclose that the exposure period is measured and that the oxide film thickness measurement is conducted within a predetermined time. The patent to Huang discloses the problem and a solution, but the solution disclosed by the patent to Huang is not the solution claimed in the present application. The applicants therefore respectfully request that the §102(e) rejection of claims 1, 5, 12 and 16 be withdrawn.

The Rejection Under 35 USC 103

Claims 2-4, 9-11, 13-15, and 20-22 have been rejected under 35 USC 103(a) as being unpatentable over the patent to Huang and the prior art disclosed in the patent to Huang. Claims 4, 8, 11, and 15 have been canceled. The office action states that it would have been obvious to correct the thickness based on Figure 2 of Huang. However, the patent to Huang fails to suggest using a relationship such as that of his Figure 2 to correct a thickness measurement. In fact, the patent to Huang suggests a different method of solving the problem and thus teaches away from the invention. The Huang patent teaches placing a protective film, which does not interfere with measurements, over the surface to protect it. Therefore, the applicants respectfully request the

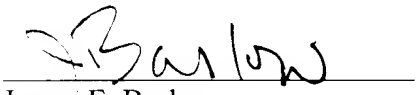
withdrawal of the rejection of claims 2, 3, 9, 10, 13, 14, 20 and 21 under section 103 based on Huang.

Claims 6, 7, 17, and 18 have been rejected under 35 USC 103(a) as being unpatentable over the patent to Huang as applied to claims 5 and 16 and further in view of the patent to Torii et al. Claims 6, 7, 17 and 18 depend, directly or indirectly, on independent claims 5 and 16. Claims 5 and 16 however recite features not disclosed or suggested in the patent to Huang, as mentioned above, and Huang teaches away from the invention recited in those claims. Therefore, the applicants request that the rejection of claims 6, 7, 17, and 18 under section 103 based on the patent to Huang be withdrawn.

In view of the forgoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Although no fees are believed to be due, please charge any additional unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,



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